DOCUMENT RESUME

ED 298 120 SP 030 552

AUTHOR Porter, Andrew
TITLE Understanding Teaching: A Model for Assessment. Occasional Paper No. 124.
INSTITUTION Michigan State Univ., East Lansing. Inst. for Research on Teaching.
PUB DATE Aug 88
NOTE 27p.
AVAILABLE FROM Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing, MI 48824 ($3.00).
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Classroom Observation Techniques; *Evaluation Criteria; *Evaluation Methods; Teacher Behavior; *Teacher Effectiveness; *Teacher Evaluation; *Teaching Skills

ABSTRACT

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UNDERSTANDING TEACHING: A MODEL FOR ASSESSMENT

Andrew Porter

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Institute for Research on Teaching

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SP030552

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Published by

The Institute for Research on Teaching
College of Education
Michigan State University
East Lansing, Michigan 48824-1034

August 1988

This work is sponsored in part by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded from a variety of federal, state, and private sources including the United States Department of Education and Michigan State University. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the funding agencies.

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The **Institute for Research on Teaching** was founded in 1976 at Michigan State University and has been the recipient of major federal grants. Funding for IRT projects is currently received from the U.S. Department of Education, Michigan State University, and other agencies and foundations. IRT scholars have conducted major research projects aimed at improving classroom teaching, including studies of classroom management strategies, student socialization, the diagnosis and remediation of reading difficulties, and school policies. IRT researchers have also been examining the teaching of specific school subjects such as reading, writing, general mathematics, and science and are seeking to understand how factors inside as well as outside the classroom affect teachers. In addition to curriculum and instructional specialists in school subjects, researchers from such diverse disciplines as educational psychology, anthropology, sociology, history. economics, and philosophy cooperate in conducting IRT research. By focusing on how teachers respond to enduring problems of practice and by collaborating with practitioners, IRT researchers strive to produce new understandings to improve teaching and teacher education.

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Abstract

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UNDERSTANDING TEACHING: A MODEL FOR ASSESSMENT[1]

Andrew Porter[2]

The education reforms of the 1980s began with a report from the National Commission on Excellence in Education (1983), A Nation at Risk. In the five years following release of that report, more has been said, written, and done about teacher assessment than is known. By August 1987 all states but Alaska and Iowa had adopted or were in the process of adopting one or more teacher testing programs (Rudner, 1987). Twenty-seven states had admissions tests for teacher preparation programs, 44 states were implementing certification tests (three states had even implemented recertification tests), and 24 states had performance assessment programs for teachers or were in the process of implementing such programs. These state initiatives are in part a response to and in part fueled by two highly influential reports that recommended strengthening the teacher corps as the key to improving the quality of American education: A Nation Prepared: Teachers for the 21st Century (A report by the Carnegie Forum on Education and the Economy, 1986) and Tomorrow's Teachers (A report of the Holmes Group, a consortium of research universities, 1986). As the Carnegie report put it, "The key to success (in strengthening education) lies in creating a profession equal to the task, a profession of well educated teachers prepared to assume new powers and responsibilities to redesign schools for the future" (p. 2). With all this attention

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[1]This paper is based on a presentation given at the annual meeting of the American Educational Research Association in New Orleans, April 1988, and will be published in the Journal of Teacher Education.

[2]Andrew Porter is director of the Wisconsin Center for Education Research and professor of Educational Psychology at the University of Wisconsin-Madison.

devoted to teaching and teacher assessment, not surprisingly the professional literature has been full of related commentary and debate. The U.S. Department of Education's Office of Educational Research and Improvement published a report, What's Happening in Teacher Testing (Rudner, 1987) in August 1987; Phi Delta Kappan (Cole, 1987) devoted part of its September 1987 issue to teacher testing; Educational Leadership ("Progress," 1987) devoted its April 1987 issue to teacher assessment; and the Journal of Negro Education ("Teacher," 1986) had a special issue in Summer 1986 on teacher assessment.

The purpose of this paper is to provide a framework for thinking about teacher assessment. A macro-level model of good teaching is presented. Upon the basis of that model, good teaching is characterized and target domains for teacher assessment are identified. The paper closes with commentary on problems and issues for teacher assessment.

Why All the Emphasis on Teacher Assessment?

The goal of education reform in the 1980s is improved student learning of academic content. Equity in educational opportunity, vocational education, and special education, each a focus of an earlier reform movement, are still of concern, but "excellence" in academic work best captures the thrust of the 1980s reforms. The fear is that "the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people" (National Commission on Excellence in Education, 1983, p. 5).

Another important difference between the education reform of the 1980s and earlier reforms in the 1950s, 1960s, and 1970s is that good teaching is seen as the single most important piece to solving the puzzle of achieving excellence in education. Previous reforms either took good teaching for granted or saw teachers as a part of the problem but not a part of the

solution (e.g., efforts to provide "teacher-proof" curricula). The goal of the current reforms is excellence with a focus on students' learning academic content, and the primary approach to reaching the goal is the improvement of teaching. The most popular method for improving teaching is teacher assessment. The belief is that if we can effectively assess teaching, teaching will improve.

Goals and Assumptions of Teacher Assessment Programs

There are at least four ways in which teacher assessment is thought to hold potential for strengthening teaching:

- Selection/certification. The idea behind selection and certification is to eliminate weak teachers, either through denying persons with low aptitude the opportunity to study to become a teacher or by denying employment to individuals who lack certain qualifications.
- Clarification of goals. The idea behind clarifying goals is that assessment techniques operationalize what is wanted and therefore help to provide a clearer target for teacher preservice and inservice preparation. This in turn makes teacher education both more effective and more efficient.
- Formative evaluation. The idea behind evaluation is that teacher assessments can serve diagnostic and prescriptive purposes that can guide self-improvement efforts of teachers.
- Incentives. The idea behind incentives is that if teachers are rewarded for good teaching through merit pay, then teachers will try harder and be more effective.

These ideas of selection, clear goals, formative evaluation, and incentives are, at least in theory, mutually compatible and potentially reinforce each

other. They may, however, lead to quite different approaches for teacher assessment and so to quite different problems.

Underlying the belief that assessment of teachers will strengthen teaching are some basic assumptions. First and most important is the assumption that we know what we want. Properly assessing teaching requires knowing what good teaching is (or at least knowing some of the important pieces of good teaching). In addition to this primary assumption are two more specific ones. Either enough people who possess the necessary qualifications to be good teachers are willing to be teachers (and so can be distinguished from those who lack such qualifications), or we know how to produce sufficient numbers of people who have such qualifications.

What Is Good Teaching?

Serious and systematic research on teaching is still in its infancy. As recently as the late 1960s, only a handful of researchers had focused their work on identifying characteristics of good teaching. The research was characterized by studies correlating teacher classroom behaviors with student outcomes (since labeled process-product research). In the early and mid-1970s, research on teaching increased in both amount and sophistication, largely due to the intellectual and financial leadership of the National Institute of Education, U.S. Department of Education. The nature of the work expanded to include (in addition to process-product research) research on teacher decision making, its antecedents and its consequences; ethnographic research on classroom interactions; and research on the relationships between educational policies and other organizational features of schools, classroom practices, and student outcomes. We now know a great deal about good teaching, but as more is known about good teaching, it becomes increasingly clear that much remains to be known.

A Model of Good Teaching

Figure 1 provides a model of teaching. The model moves from left to right, identifying causal paths between and among the prior experience of teachers and the contexts of teaching; the knowledge and beliefs that teachers draw on in planning their work; the behaviors and thoughts that make up instructional practices; the immediate responses of students and the teacher to a teaching episode; and long-term outcomes of student achievement, student motivation, and student knowledge and skills to become autonomous, active learners. The model represents good teaching as a rational process, goal-oriented and planful. The model also represents good teaching as dynamic. Teachers reflect on their practice and what they perceive to be the consequences of their practice and make adjustments. The model also shows good teaching to be complicated, with many interconnected parts. The best teachers attend to these complexities, but many teachers are less sophisticated. In fact, while research on teaching forms the basis for the model in Figure 1, that same research documents great individual differences among teachers in the degree to which their teaching is goal-oriented, planful, employs effective strategies, and is continuously evaluated and modified.

The research literature underlying the model in Figure 1, while incomplete, is substantial (e.g., Porter & Brophy, 1988; Wittrock, 1986). It is not possible (nor probably useful) to detail that work here; however, the research can be characterized in various ways that have implications for assessment.

Content vs. Pedagogy

Beliefs about what is required for good teaching tend to be strongly held and sharply contradictory. Depending upon who is asked, the definition of

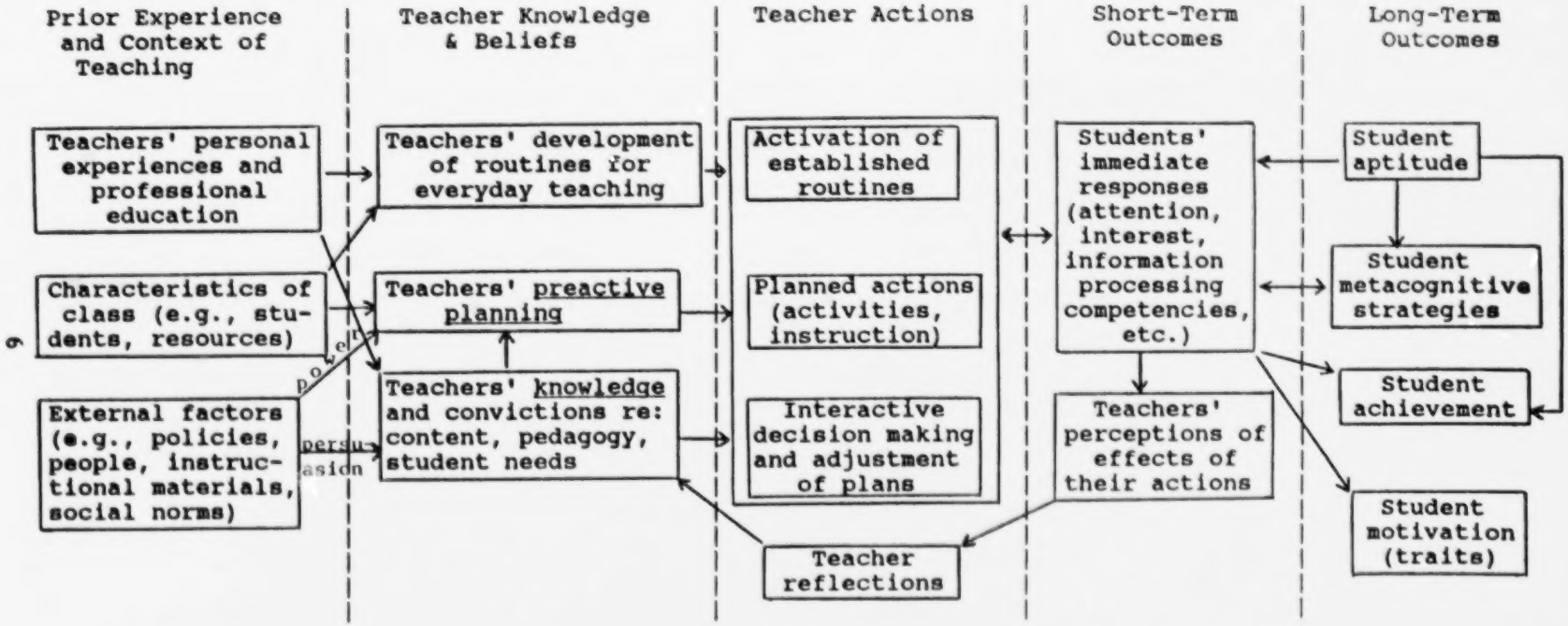
Prior Experience and Context of Teaching
Teacher Knowledge & Beliefs
Teacher Actions
Short-Term Outcomes
Long-Term Outcomes
Teachers' personal experiences and professional education
Characteristics of class (e.g., students, resources)
External factors (e.g., policies, people, instructional materials, social norms)
power
persuasion
Teachers' development of routines for everyday teaching
Teachers' preactive planning
Teachers' knowledge and convictions re: content, pedagogy, student needs
Activation of established routines
Planned actions (activities, instruction)
Interactive decision making and adjustment of plans
Teacher reflections
Students' immediate responses (attention, interest, information processing competencies, etc.)
Teachers' perceptions of effects of their actions
Student aptitude
Student metacognitive strategies
Student achievement
Student motivation (traits)

Figure 1. A model of teaching.

good teaching is likely to be overly simplistic in either one of two ways. At the one extreme are those who maintain that mastery of the subject matter to be taught is all that is required for good teaching. This contention is commonplace in higher education where assistant professors and graduate assistants who have no prior training or experience in teaching teach undergraduate students in required courses. Reviews of the quality of this instruction, while mixed, are generally negative (Dunkin, 1986). On the other extreme are those who view good teaching as primarily a matter of pedagogical expertise. This extreme is commonplace in elementary schools where teachers are expected to teach a wide range of subject matter areas for which they themselves have had little advanced study. Here, too, the reviews of the quality of instruction are mixed, but perhaps slightly more positive than for teaching in higher education.

For its part, research on teaching has focused more on pedagogical knowledge and skills than it has on teacher subject matter knowledge, but this is changing. Cognitive scientists, focusing on student learning of subject matter, are beginning to explore implications of their work for teaching. Their work focuses on teacher knowledge of subject matter and what Shulman (1986) has labeled "pedagogical content knowledge." At the same time, research on teaching has moved from its early focus on generic teaching strategies (i.e., teaching strategies that are applicable to teaching in any subject) to increasing concern for interactions between what is to be taught and how it is best taught. Initially, this move in research on teaching toward greater concern for the content of instruction was limited to work that considered subject matter as an important contextual factor in studying pedagogical practices (e.g., research on the teaching of reading, research on the teaching of mathematics). Now some research seeks to identify ways in

which good teaching is subject matter-specific, especially connections among the structure of what is to be learned, the teacher's knowledge of what is to be taught, the students' prior knowledge of what is to be learned, and pedagogical practices (e.g., Porter & Brophy, 1988).

At least for K-12 teachers, most agree that good teaching requires a thorough grounding in the subject matter to be taught and a broad and usable knowledge of the various pedagogical strategies that are known to improve the effectiveness of teaching. At this point, the literature on pedagogical strategies is older and more informative than the literature on subject matter knowledge. A great deal has been learned about effective management strategies, how best to organize and evaluate instruction, and the role of feedback and reinforcement to students in effective teaching. As for the role of teacher subject matter knowledge in teaching, the research is less clear. More knowledge seems better, but how much is enough is unclear.

Not only do the best teachers provide effective instruction, instruction from which students learn, they also focus their instruction on important content. First, good teachers cover less content but in greater depth. Deciding between breadth versus depth distinction in content coverage is an area in which teachers receive relatively little useful assistance. Curriculum materials and educational policies all push in directions of adding new content to an already overburdened curriculum. Because the amount of time is fixed, the result is an increasingly thin curriculum.

Second, good teachers also place a greater emphasis upon higher order thinking and problem solving content. In some ways, the distinction between higher order thinking, on the one hand, and facts and skills, on the other, is related to the breadth versus depth distinction. Emphasizing higher order thinking and problem solving requires instruction that emphasizes

understanding a few key concepts and learning to apply those concepts in solving novel problems. Third, good teachers make fewer trade-offs between important content and convenience. Learning academic content well and in ways that promote higher order thinking and problem solving is hard work for students and teachers. Not surprisingly, some teachers compromise the content of their instruction for the personal convenience of themselves and their students through setting lower standards, making few assignments that require elaborated student responses and limiting topics to minimum skills (e.g., Sedlak, Wheeler, Pullin, & Cusick, 1986).

Figure 1 includes both teachers' knowledge and convictions pertaining to content and their knowledge and convictions pertaining to pedagogy and student needs. Figure 1 also recognizes teacher planning as an important ingredient to good teaching, including planning what content to emphasize in instruction as well as how to teach that content.

Principles vs. Prescriptions

Another distinction in characterizing good teaching is between principles and prescriptions. For some, good teaching is best defined by lists of micro-level detailed statements of effective teaching behaviors such as 3-second wait time (Rowe, 1974). These prescriptions for good teaching result in highly elaborated scripts for good teachers to follow. Popular examples are direct instruction (Rosenshine & Stevens, 1986) and the Madeline Hunter program (Hunter, 1976). For others, good teaching is best characterized by general guidelines and predispositions that point teachers in productive directions. These principles of good teaching, in contrast to prescriptions, are not explicit in telling a teacher what to do. For example, a principle of good teaching is to make sure each student knows exactly what

is to be learned (the desired outcome of study, not the activity to be completed) and why it is to be learned (e.g., Duffy et al., 1986).

This distinction between prescriptions and principles is often correlated with the distinction between teachers as technicians and teachers as semiautonomous professionals. It is also correlated with the distinction between those who are accused of oversimplifying what is involved in good teaching and those who are accused of making good teaching too complex and idiosyncratic. But as in the content/pedagogy distinction above, research examines both sides. Prescriptions help teachers establish essential routines that make the task of teaching manageable; these routines, in turn, help free up time and energy that can be reinvested. By drawing upon principles of good instruction, teaching becomes increasingly strategic, tailored to the unique resources and needs of the classroom.

In Figure 1, routines are distinguished from preactive planning. Over time, prescriptions can lead to effective routines while principles can lead to good planning. In short, good teaching requires a script, routines, and standardized responses, but it also requires thoughtful and appropriate adjustments to the script, drawing upon principles, to become increasingly strategic in the pursuit of student learning.

Orientations and Beliefs

As Figure 1 suggests, good teaching is goal-directed, purposeful, and rational. Good teaching is also complicated, with many points for possible breakdown between initial plans and final outcomes. Thus, having the "right" orientations and beliefs is essential. These include beliefs about students and how they learn; perceptions of the role of schools within a larger social context; and beliefs about teachers, the curriculum, and pedagogy. For example, academically oriented teachers produce more academic learning gains

than affectively oriented teachers (Prawat & Nickerson, 1985) but these academically oriented teachers are less likely to promote self-esteem and intrinsic motivation in students (Deci & Sheinman, 1981). Teachers who accept responsibility for student learning (or at least shared responsibility with the students) are more effective in promoting student learning than are teachers who see the job of teaching as laying out the content amd leaving it up to students as to whether or not that content is learned (Lee & Gallagher, 1986).

Not only are teachers' orientations and beliefs important, it is a mistake to take them for granted. In a survey of prospective teachers at the end of their teacher preparation programs, over half believed that encouraging social development or enhancing emotional growth are more important goals of schooling than promoting intellectual growth. Nearly twice as many wanted to be known as "being very sensitive to the needs and abilities of individual students" than to be known as one "who pressed students to perform at their highest possible levels of academic achievement" (Kalaian & Freeman, 1985). The point here is not to argue which of these orientations and beliefs is the better, but merely to indicate that in understanding teaching practices and effects, it is not sufficient to stop with assessing content and pedagogical knowledge and skills. Orientations and beliefs are a third important component of good teaching (Porter & Freeman, 1986).

Metacognitive Strategies

Yet a fourth characteristic of good teaching concerns the acquisition and use of metacognitive strategies. For teachers, this means seeing the importance of critiquing their own practice and knowing how to do that. For good teachers, teaching is dynamic. They learn by doing, as well as by reading and by watching others. The knowledge, skills, and beliefs necessary for

reflective teaching are just beginning to be clarified, but they hold many points in common with the metacognitive strategies (e.g., comprehension monitoring, sense making, problem solving) being identified for students in becoming semiautonomous, independent learners.

In addition to having and using metacognitive strategies in learning to teach, good teachers also provide their students with similar metacognitive strategies (e.g., Duffy et al., 1986; Palincsar & Brown, 1984). These strategies, of value in their own right, are essential prerequisites to higher order thinking and problem solving in subsequent work.

What To Assess and When

Good teaching has been characterized as a goal-directed rational process moving from prior experiences and the context of teaching through teacher knowledge and beliefs to teacher actions. These actions result in students' and teachers' immediate responses to instruction and students' long-term outcomes of achievement, motivation, and aptitude. In Figure 1, this progression has been blocked off into five segments, any one or combination of which can and has been a target for teacher assessment:

- Prior experience--Does the person have the right training?
- Knowledge and beliefs--Does the person know what he or she needs to know, and does the person have the requisite beliefs and convictions?
- Teacher actions--Does the person carry through on his/her potential by actually doing what is needed?
- Short-term outcomes--How do the students and the teacher him/herself react in response to the instruction provided?
- Long-term outcomes--What do the students end up knowing, thinking, and doing as a result of instruction?

The four levels of teacher assessment can strengthen instruction, but any program of assessment must be thoroughly examined. Teacher certification has been carried out and is being carried out based on prior experience. At least until recently, graduating from an accredited teacher training program satisfied the requirements for initial certification. This is the weakest approach to teacher assessment. Past experience and training are the farthest removed from what is ultimately of interest--student benefits--and only modestly predictive of teachers' knowledges and beliefs and even less so of teachers' classroom practices (teacher actions). Content knowledge (sometimes limited to basic skills knowledge) and pedagogical knowledge are also being assessed as a part of the certification process. Most recently there has been some move to have a portion of certification standards based on teacher actions. Clarification of goals, formative evaluation, and incentives for good teaching are most often based on assessing teachers' actions and/or assessing short-term student outcomes and/or assessing long-term student outcomes. Each of these approaches is based on important assumptions, and each approach by itself is incomplete.

To the extent that we understand what is meant by good teaching (a fully specified model of good teaching), assessments focusing exclusively upon the teacher knowledge and beliefs and teacher actions blocks in Figure 1 would be complete. But a full understanding of good teaching is not currently available, nor does it seem like an obtainable goal. There appear to be multiple roads to good teaching, even for a fixed set of conditions (e.g., policies, people, instructional materials, social norms). Thus, any assessment focusing exclusively upon teacher knowledge, beliefs, and actions is destined to be incomplete. Within this, of course, any assessment focusing exclusively upon teacher knowledge and beliefs begs the question of how knowledge and

belief will translate into action. Similarly, any assessment that focuses exclusively upon teacher actions has a herculean sampling problem to solve to ensure that the actions assessed are representative of the full set of actions needed for good teaching.

These shortcomings to assessments focused on teacher knowledge, beliefs, and actions have pushed some educators and policymakers to assessments of student outcomes. But, there are serious limitations to using student outcomes, as well. Short-term outcomes, while relatively easy to assess, are not particularly good predictors of long-term outcomes of student achievement and motivation and, after all, long-term outcomes are what is really of interest. Why not focus assessment on long-term student outcomes? Unfortunately, student achievement and motivation are only loosely coupled to what teachers do. They are heavily influenced as well by student aptitudes and family support, making attributions to teaching difficult.

In Conclusion: Some Implications for Assessment

Like good teaching, good assessment is not easy. The motivations for teacher assessment are generally pure and the intentions generally good; the goal is to improve the quality of education. But good intentions are no guarantee of good practice. As we have seen, well intentioned teachers differ substantially on virtually every aspect of good teaching (Porter & Brophy, 1988). The same is almost certainly true for teacher assessment practices.

Comprehensive Assessment

If assessment is to drive teacher preparation, serve formative evaluation practices of teachers, and become the basis for merit pay allocations, then it is important that teacher assessment present a valid and complete target for these activities. If, for example, assessments of teacher knowledge and

actions are limited to prescriptions of good teaching, this narrow target may focus attention away from the development and use of principles of good teaching (e.g., holding worthwhile goals, accepting responsibility for student learning, communicating to students what is to be learned and why, empowering students to learn on their own, knowing and using students' misunderstandings of subject matter in planning and delivering instruction). Similarly, assessment focusing exclusively upon principles would have the undesirable effect of diverting attention away from prescriptions. Similarly, a lack of concern for teacher orientations and beliefs might leave this important component of good teaching taken for granted, and that, as we have seen, is a mistake. The expectations that teachers hold for student learning are as important a determinant of instructional effectiveness as is the teacher's knowledge of content or knowledge of good pedagogical practices. Finally, minimum competency assessments of teaching, while possibly useful for purposes of selection, do a disservice to formative evaluation and merit pay allocations which require high standards if they are to elevate practice.

Size and Composition of the Teacher Corps

One of the great challenges to teacher assessment is the sheer number of teachers required to staff K-12 schools. There are approximately 2.5 million teachers in the United States. Some analysts estimate staff turnover at a level requiring one million new teachers during the next five-year period (Stern, 1987). The magnitude of this staffing task places great pressure on teacher assessment practices to be efficient. But not surprisingly, there is tension between the goals of efficiency and the goals of validity (especially the need for comprehensive assessment). How best to reach a compromise between these two opposing forces is not clear, and the stakes are exceedingly high.

Good teachers are desperately needed to reach the goal of excellent education, but good teachers are also in relatively short supply. One solution is to set selection criteria so that supply always meets demand. When this is done, selection criteria rise and fall as the popularity of the profession increases and decreases, but such elastic standards do not serve the goal of excellence. If standards are set and held at a high level, however, either teacher shortages occur or the costs of teacher recruitment and preparation escalate.

Just under the surface of this problem is yet another, minority representation in the teacher corps. Ideally, the minority composition of the teacher corps would parallel the minority composition of the student body served. We are a long way from this goal and moving in the wrong direction; too few minorities graduate from college, and, of them, only a small fraction are interested in becoming teachers. Of the minorities that do pursue teaching as a career, a dishearteningly large proportion fail certification tests (Rudner, 1987). The challenge is for teacher assessment practices to help solve these problems of size and composition of the teacher corps, not exacerbate them.

The Limits of Observation

Many hold classroom observation as the sine qua non of teacher assessment. Putting costs aside for the moment, what better way to assess the quality of a person's teaching than to observe that person in the classroom actually teaching students? But costs cannot be put aside forever and even if they could, there are other serious shortcomings to teacher assessment through observation. Classroom observation is an excellent component of a system of teacher assessment, but classroom observation should never be taken as the ultimate assessment device.

First, good teaching involves good content as well as good pedagogy. The content of instruction is not easily observed and is only well defined over an extended period of instruction which makes observation even more difficult. Second, good teaching is complex and not uniquely identifiable. It is difficult to identify with certainty, though bad teaching is probably easier to identify. Third, good teaching is hard work, something not easily done all day, every day, all year long, year after year. Good teachers are able to sustain their efforts over the long haul through being strategic in their expenditures of good teaching energy. Classroom observation can identify what a teacher is able to do for brief periods (while others watch), but it is less useful for describing what is done day in and day out.

Who Should Control Assessment?

With one notable exception, recent initiatives in teacher assessment come from the formal school hierarchy in a top-down fashion. The states are the primary actors. To a substantially lesser extent, institutions of higher education are also involved. The one exception to this pervasive top-down approach to teacher assessment is the National Board of Professional Teacher Standards initiated in response to the work of the Carnegie Forum on Education and the Economy and with Carnegie Foundation money. The majority of this 64-member board are teachers.

If the goal of teacher assessment is to strengthen the teaching profession, then the profession must take control of teacher assessment. Advice and input are needed from subject matter experts, researchers of teaching, the public, and education administrators. If teacher assessment is to have the authority required to persuade teachers to think about their practice in new and better ways and to strive for ever-increasing effectiveness, then teacher assessment must have the authority that can only be gained through

teacher expertise and teacher control. It may be possible to legislate standards of minimum competence for teachers, but it seems unlikely that excellence in teaching can be legislated (i.e., controlled from outsiders in a top-down manner). In short, teacher assessment will best serve the goals of clarifying what is meant by good teaching, formative evaluation, certification, and distributing merit pay, if teachers have the controlling voice in designing, implementing, and maintaining the assessment procedures.

The Need To Do Something

The past several pages have given a framework for thinking about teacher assessment. Using the framework, a number of challenges to existing assessment practices and plans for future assessment practices have been identified. This analysis makes clear that an ideal system of teacher assessment exceeds current resources of knowledge and available effort. Nevertheless, there is a need to do something now, even if it is incomplete. Better teaching is an important part of better education, and better education is badly needed.

As new teacher assessment methods are designed and implemented, they should be evaluated against the standards of the best theoretical assessment practices. Systems of assessment should be designed to draw upon the three domains of teacher knowledge, skills, and beliefs; teachers' classroom behaviors; and student outcomes. Looking at assessments from all three of these domains in combination should help clarify how each piece of information is based on strong assumptions that may or may not be valid. Finally, we must take care to assess the cost and benefits of the teacher assessment practices we use. If the considerable expense involved does not result in demonstrated gains in benefits for students, adjustments must be made. We must also be on guard against undesirable side effects such as the elimination of minority

teachers from the teacher corps. Keeping the ideal assessment system in mind, using multiple approaches to assessment, and evaluating what is being accomplished through assessment should help create a healthy skepticism as an antidote to the incompleteness and lack of validity that our teacher assessment practices will surely suffer.

References

Carnegie Forum on Education and the Economy. (1986). A nation prepared: Teachers for the 21st century. New York: Author.

Cole, R. (Ed.). (1987). Phi Delta Kappan [Special section on teacher testing], 69, 31-53.

Deci, E.L., & Sheinman, L. (1981). Characteristics of the rewarder and intrinsic motivation of the rewardee. Journal of Personality and Social Psychology, 40, 1-10.

Duffy, G., Roehler, R., Book, C., Meloth, M., Vavrus, L., Putnam, J., & Wesselman, R. (1986). The relationship between explicit verbal explanations during reading skill instruction and student awareness and achievement: A study of reading teacher effects. Reading Research Quarterly, 21, 235-252.

Dunkin, M.J. (1986). Research on teaching in higher education. In M.C. Wittrock (Ed.), Handbook of research on teaching (3rd ed., pp. 754-777). New York: Macmillan.

Holmes Group. (1986). Tomorrow's teachers. East Lansing: Michigan State University, College of Education.

Hunter, M. (1976). Prescription for improved instruction. El Segundo, CA: TIP Publications.

Kalaian S., & Freeman, D. (1985). Highlights: Exiting Teacher Candidate Survey--Fall 1985 (Evaluation Summary Series No. 1). East Lansing: Michigan State University, College of Education, Office of Program Evaluation.

Lee, O., & Gallagher, J.J. (1986, March). Differential treatment of individual students and whole classes by middle school science teachers: Causes and consequences. Paper presented at the National Association for Research in Science Teaching, San Francisco.

National Commission on Excellence in Education. (1983). A nation at risk. Washington, DC: U.S. Government Printing Office.

Palincsar, A., & Brown, A.L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. Cognition and Instruction, 1, 117-175.

Porter, A., & Brophy, J. (1988). Synthesis of research on good teaching: Insights from the Institute for Research on Teaching. Educational Leadership, 45(8), 74-85.

Porter, A.C., & Freeman, D.J. (1986). Professional orientations: An essential domain for teacher testing. Journal of Negro Education, 55, 284-292.

Prawat, R.S., & Nickerson, J.R. (1985). The relationship between teacher thought and action and student affective outcomes. Elementary School Journal, 85, 529-540.

Progress in evaluating teaching. (1987). Educational Leadership, 44(7).

Rosenshine, B., & Stevens, R. (1986). Teaching functions. In M.C. Wittrock (Ed.), Handbook of research on teaching (3rd ed., pp. 376-391). New York: Macmillan.

Rowe, M.B. (1974). Wait-time and rewards as instructional variables, their influence on language, logic, and fate control: Part 1. Wait Time. Journal of Research in Science Teaching, 11, 81-94.

Rudner, L.M. (1987). What's happening in teacher testing: An analysis of state teacher testing practices. Washington, DC: U.S. Government Printing Office.

Sedlak, M.W., Wheeler, C.W., Pullin, D.C., & Cusick, P.A. (1986). Selling students short: Classroom bargains and academic reform in the American high school. New York: Teachers College Press.

Shulman, L.S. (1986). Those who understand: Knowledge growth in teaching. Educational Researcher, 15(2), 4-14.

Stern, J.D. (1987). The condition of education. Washington, DC: U.S. Government Printing Office.

Teacher testing and assessment. (1986). The Journal of Negro Education, 55(3).

Wittrock, M.C. (Ed.). (1986). Handbook of research on teaching (3rd ed.). New York: Macmillan.